

Performance Based Management

Performance-Based Management



Highway Performance-Based Management

Steve Varnedoe, PE
Chief Engineer - Operations
March 2006

Performance-Based Management



- The Origin of PBM
 - Operations Business Strategies Workshop
October 2004
 - Chief Engineers office, Division Engineers,
Unit Heads
 - Probing Questions?

Performance-Based Management



Probing Questions

- If DOT was your Personal Business, what would you do differently?
- Are we satisfied with where we are today?
- Can we take our existing resources and do a better job?
- Who is Accountable?
- How do we motivate our employees and improve the efficiency of our organization?

Performance Based Management

Performance-Based Management

- Drivers and Considerations

- Public Expectations
- Legislative Expectations
- BOT adopts Long Range Plan
- NCDOT Business Plan
- Growing System demands
- Budgetary Challenges
- Workforce Demographics
- Technology
- Construction Program Changes

Performance-Based Management

- Goals

- Move the organization from reactive to strategic/outcome based
- Clearly define mission and expectations for organization and all employees
- Develop strategies that result in improved efficiency, performance and preservation of the highway network consistent with the Statewide Long Range Plan.
- Develop a tiered approach for performance measures, expectations and appropriate levels of service.
- Develop management tools and systems to measure outcomes and performance and make appropriate adjustments
- Management flexibility with accountability

Statewide Transportation Plan

- Purpose

- Offers Policy Guidance & Strategic Direction for NCDOT
- Federally Mandated
- Inventory of 25-year Transportation Needs for all modes
- Forecast of Available Revenues
- Opportunity to solicit Public & Stakeholder Interest
- Outlines Long-term Transportation Investment Priorities



Performance Based Management

Statewide Transportation Plan

- Key Points
 - Plan is a long-range Investment Blueprint
 - Visionary; offers programmatic goals
 - Does not supercede the TIP process
 - Only meets 2/3 of all projected needs (\$84B vs. \$55B)
 - Underscores the need for investment flexibility
 - Recognizes Regional Differences
 - Maximize limited resources based on Dept. Goals
 - Focus on appropriate investment strategies by Tier

System Definition

Long Range Plan Tiers

- **Statewide Tier** - Facilities such as Interstates and major Primary Highways which serve long-distance trips, connect major population centers, have the highest usage and primarily provide a mobility function.
- **Regional Tier** - Minor US and NC designated highways which connect regional centers and typically serve high levels of demand for short distance like commuter travel.
- **Subregional Tier** - Minor NC routes and Secondary Roads which serve localized, short distance movements, have low demand, and provide land access to homes and businesses.

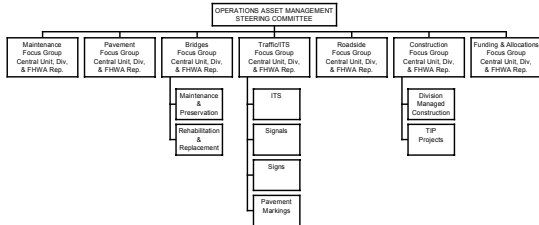
Performance Based Management

- Committee and Workgroup members:
 - Steering committee- Chief Engineers office - Division Engineers, CFO & FHWA
 - Functional Area Workgroups Established - Division Engineers and Unit Head Co-Chairs, with Assistant Division Engineer, Assistant Unit Head and FHWA staff members

Performance Based Management

Performance Based Management

Highway Performance-Based Management Structure



Performance-Based Management

- Performance Measurement:
 - Clearly defines organizational objectives or outcomes
 - Uses data/statistical evidence to determine progress toward established goals/outcomes
 - Measures efficiency, effectiveness of organization's programs and operations (condition, quality, timeliness, reliability, etc.)
 - Simple, understandable, logical, repeatable
 - Shows a trend over time

Example

Functional Work Group Worksheet

Element: Bridge Maintenance and Preservation

Asset: Deck

Activities: Deck Maintenance

Condition Indicator: Condition Rating of less than or equal to 6

Performance Measure: Condition Rating by Square Feet of Deck

LOS Category	LOS Description
A	15% or less of condition ratings below 6
B	Between 15.01% and 20% of condition ratings below 6
C	Between 20.01% and 25% of condition ratings below 6
D	Between 25.01% and 30% of condition ratings below 6
F	30% or more of condition ratings below 6

	Statewide	Regional	Subregional	Division	County
Performance Target	85%	85%	85%	85%	85%
Assessment Method	85%	85%	85%	85%	85%
Does Assessment Data exist	Y	Y	Y	Y	Y
Does level of survey exist	Y	Y	Y	Y	Y
Does Feature Inventory exist	Y	Y	Y	Y	Y
Does level of Feature Inventory	Y	Y	Y	Y	Y

Observation: Performance Target - A performance target is a goal or objective for the condition of assets or the road system.

Assessment Method - The method recommended for appraising the asset or activity, i.e. Random Sampling, % of total, 100% assessment, etc.

Does Assessment Data exist - Does the data exist and at what level.

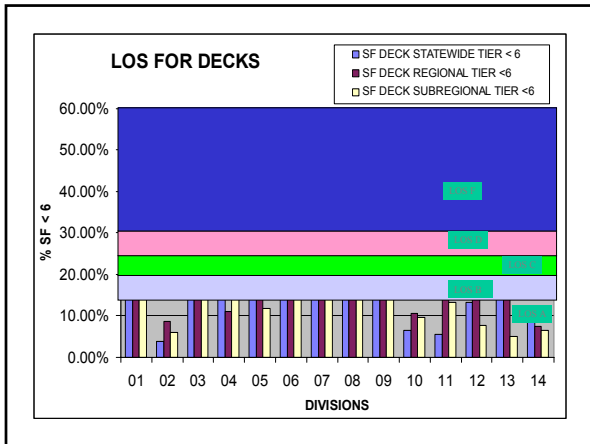
Does level of survey exist - Should the assessment be conducted down to the various management levels.

Does Feature Inventory exist - Does the numerical count of the asset exist in detail and at what management level.

Does level of Feature Inventory - Should detail information exist for the numerical count of the asset and at what management level.

Comments:

Performance Based Management



Example

Functional Work Group Worksheet

Element : Construction Projects

Activities: Project Cost

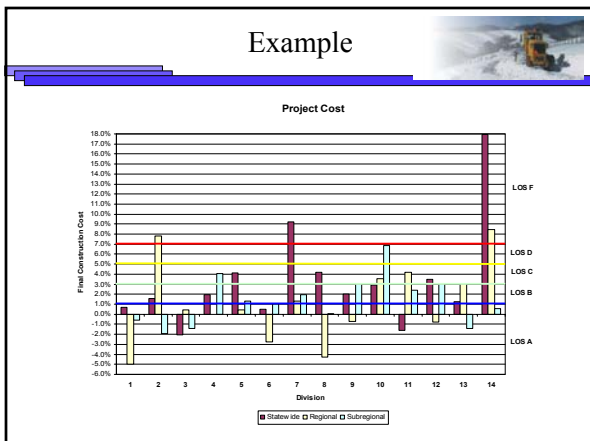
Performance Measure: Final Construction Cost % above Construction Budget amount

LOS Category	LOS Description
A	Final construction cost* <= 1% above construction budget amount**
B	Final construction cost* 1.1% - 3% above construction budget amount
C	Final construction cost* 3.1% - 5% above construction budget amount
D	Final construction cost* 5.1% - 7% above construction budget amount
F	Final construction cost* > 7% above construction budget amount

	Statewide	Regional	Subregional
Performance Target	B	B	B
Assessment Method			
Does Assessment Data Exist	Yes	Yes	Yes

* Final Construction Cost = All payments to contractor + E & I + Claims + BSIP + other construction charges
 (These are all construction charges after letting)

** Construction Budget Amount = Bid Price + Percentage additves for BSIP, E&I, Claims, Etc. based upon actual and historical experience.



Performance Based Management

Example



Functional Work Group Worksheet

Element : Construction Projects

Activities: Project Completion

Performance Measure: % of projects completed by original contract completion date.

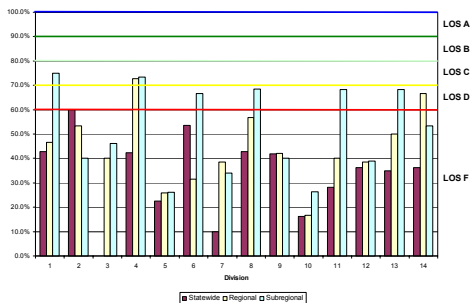
LOS Category	LOS Description
A	90% to 100% of projects completed by original contract completion date.
B	80% to 89% of projects completed by original contract completion date.
C	70% to 79% of projects completed by original contract completion date.
D	60% to 69% of projects completed by original contract completion date.
F	< 60% of projects completed by original contract completion date.

	Statewide	Regional	Subregional
Performance Target	A	B	C
Assessment Method			
Does Assessment Data Exist	Yes	Yes	Yes

Example



Project Completion



Example



Functional Work Group Worksheet

Element : Construction Projects

Activities: Construction Quality

Performance Measure: 9 month review with Construction Quality Index Evaluation Form.

LOS Category	LOS Description
A	Construction Quality Index of 3.5 - 4.0
B	Construction Quality Index of 3.0 - 3.4
C	Construction Quality Index of 2.5 - 2.9
D	Construction Quality Index of 2.0 - 2.4
F	Construction Quality Index of < 2.0

	Statewide	Regional	Subregional
Performance Target	A	B	B
Assessment Method			
Does Assessment Data Exist	Yes	Yes	Yes

Performance Based Management

Example



Functional Work Group Worksheet

Element : Construction Projects

Activities: Design Quality

Performance Measure: Design Quality Index Evaluation Form.

LOS Category	LOS Description
A	Design Quality Index of 3.5 - 4.0
B	Design Quality Index of 3.0 - 3.4
C	Design Quality Index of 2.5 - 2.9
D	Design Quality Index of 2.0 - 2.4
F	Design Quality Index of < 2.0

	Statewide	Regional	Subregional
Performance Target	A	B	B
Assessment Method			
Does Assessment Data Exist	Yes	Yes	Yes

Performance Based Management



- Short Term and Long Term Vision
(25 years - Long Range Plan provides the Blue Print)
- 2 years - 2004 - 2006 Operations Strategic Plan
 - Develop and implement performance measures and targets
 - Endorsement by DOT Sr Management and BOT
 - Determine resources needed to achieve target
 - Funding methodology developed
- 5 years - Substantial Legislative changes achieved
 - Assessment/Evaluation Process in place and functioning
- 10 years - Fully Implement LRP & Operations Strategic Plan
 - Performance/LOS Targets are met and adjusted as needed

Performance Based Management



What will make this work?

- Must have buy in from all levels
- Long Term Approach
- Establish Realistic, Attainable goals that are clearly defined and easily measured
- Incremental gains vs. miracles
- Build on success of other Goal Oriented Programs
(Sec. Roads, NCMA, SB 1005)

Performance Based Management

Performance Based Management



Results, Benefits and Expectations

- Uniformly constructed, maintained & operated Highway System
- Data will drive Decision making - Pushed down in the organization
- Highest & Best use of Resources - efficiency
- Clearly defined Performance Expectations for all employees
- Increased accountability and flexibility
- Challenging and rewarding workplace

Questions?
